POPULATION AGING: IMPLICATIONS FOR REGIONAL TRANSPORTATION PLANNING*

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ABSTRACT

The nation's population has been aging slowly for decades. But dramatic jumps in the population 65 and older will occur as Baby-Boomers—76 million people born between 1946 and 1964—move into older age group in 2011. According to Census Bureau's latest projections, the number of persons 65 years and older will be doubled by early of this century. About 1 in 8 people in the country are elderly today, but elderly population would account for over 20 percent of total population—i.e., one in every five Americans—by 2030. This paper examines likely impacts on regional transportation planning from an aging population in three key areas: growth forecasts, transportation revenue forecasts, and transportation modeling applications. The data and analysis results suggest that significant increase in elderly population would have profound impacts on all these key areas in transportation planning. However, uncertainties regarding the effects on overall economy and Baby-Boomers' behaviors and decision making after 2010 call for continuing research and monitoring. The paper suggests that future transportation planning should start to consider explicitly in the growth forecasts, and consistently throughout the planning components, the effects of a significant rise in the elderly population between 2015 and 2030. The modest growth rate of population aged 65 and over in the near future provides an opportunity to plan for the certain, rapid growth during the period when Baby-Boomer reaches age 65 years.

INTRODUCTION:

It is no doubt that an emerging digital economy and e-commerce, as well as the massive population aging tide after 2010 are the two most significant trends in the early 21st century that will have profound impacts, both positive and negative, on all aspects of our lives. The Internet is growing (and falling?) so quickly, and the data on it remain so inadequate, that makes it difficult to understand its current impact, let alone its future development and effect. In contrast, detailed demographic data are available for population aging, which has been creeping up slowly through decades.

While projecting future populations is an uncertain undertaking, one area of relative certainty is the aging of the nation's population. *(1)* Dramatic jumps in the older population[1] of the nation will occur as Baby-Boomers—76 million people born between 1946 and 1964—advance into older age group. Changes in population size and composition greatly influence many of the nation's policies and programs. Economists, sociologists, and researchers in urban planning are beginning to pay more attention to issues related to aging population. So far, however, national policy with respect to an aging society centers only on the solvency of the social security system. Scant attention has been given to a comprehensive and systematic analysis of, and planning for, all likely issues/impacts expected from this demographic phenomenon.

This paper will examine emerging U.S. and regional demographic trends and map their likely impacts on long-range transportation and investment planning. Particular attention will be focused on assessing effects of aging on three key transportation planning areas: growth forecasts—labor force, workers, and employment growth; transportation revenue forecasts—patterns and levels of expenditure; and travel demand modeling applications—trip making, distance, and time-of-day activity distributions of elderly people.

U.S. DEMOGRAPHIC TRENDS[2]:

The elderly population—persons 65 and over—has grown rapidly throughout the history of the nation. The rate of growth of elderly population has exceeded the growth of the population of all ages as a whole. In the 20th century, the nation's total population increased by more than 2.7 times, from 76 million in 1900 to 281 million in 2000, while the number of persons 65 years and over jumped by a factor over 10, to just under 35 million in 2000 (Table 1). Among the subgroups of population 65 years and over, the so-called "older old" (persons between 75 and 84) and "oldest old" (persons 85 years or older) have been the fastest growing segments of the elderly population. Between 1900 and 2000, the oldest old population increased by a factor of almost 34, while older old population increased by a factor of 15.

However, during the last 10-year period between 1990 and 2000, the elderly population grew at an unprecedented average annual growth rate that was *lower* than the growth rate registered by all population. In this decade (2000-2010), population aged 65 and over will also be relatively modest compared with historical growth. Combining the two decades together, the elderly population will grow at a lower rate than during any period since 1900 (Figure 1). This slow growth in elderly population between 1990 and 2010 is a direct result of low fertility during the 1930's Depression era. As the Baby-Boom cohorts enter the 65 and older age category, however, explosive growth in the elderly population is projected to occur between 2010 and 2030. While the projected high annual growth rate for elderly population of the 2010-30 period is not without precedent, there will be an unparalleled increase in the absolute number of elderly persons.

Under the latest population projections released by the Bureau of the Census, the number of persons 65 years and older will be doubled during the early years of this century. About 1 in 8 people in the country are elderly today, but the elderly population will account for over 20 percent of total population—i.e., one in every five Americans—by 2030 (Table 1). As characterized by the Census Bureau, unlike the uncertainty associated with many long-term projections, "inevitability" is the term that describes the coming rapid growth in elderly population from 2011 when the first Baby Boomer born in 1946 will start to turn 65. *(2)*

The nation's elderly population reached 30 million by 1990; it will take another two decades before the number of elderly increases to 40 million persons in 2010. Then, in the following 20 years, the elderly population will shoot up by an eye-popping 30 million to reach 70 million by 2030. Between 2010 and 2030, all living Baby Boomers will become either "young old" (65 to 74) or "older old" (75 to 84).

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[1] The label "elderly" is commonly used for the population 65 years and over.

[2] Based on updated and revised Census information, this section follows closely Chapter 2 and Chapter 5 of the Census Bureau report, "Current Population Reports, Special Studies, P23-190, *65+ in the United States,* by Frank B. Hobbs with Bonnie L. Damon. U.S. Government Printing Office, Washington, DC, 1996.

After 2030, the growth of "younger olds"—the combination of the two groups above those between 65 and 84 years old—will decelerate as the much smaller-sized cohort born after Baby Boomer generation, between 1965 and 1984 (so-called the Baby Bust), will be ages 66 through 85 in 2050. Population in this age group will reach 61 million in 2030, and stand at only 62.6 million in 2050. At the same time, the Baby Boomer generation will start to enter the oldest old age group. As a result, the growth of population age 85 and older will accelerate, and the number the oldest old population is projected to increase by more than 116%, to reach 19 million in 2050 from just under 9 million in 2030.

Elderly Population Estimates and Projections by State

Table 2 presents Census 2000 elderly population and the latest Census Bureau estimates and projections. *(3)* Numbers shown in Table 2 are consistent with summaries and conclusions from previous Census estimates for 1993 and projections for 2020 that were presented in the report *65+ in the United States*. Following are the major highlights from the Census report, however, with revised and updated information presented in Table 2.

The most populous states are also those with the largest number of elderly. In 2000, nine states had more than 1 million elderly people: California, Florida, New York, Texas, Pennsylvania, Ohio, Illinois, Michigan, and New Jersey. By 2025, Census Bureau projects that twenty-four states will have elderly population over 1 million. States with the greatest proportion of elderly are generally different from those with the greatest number. California has the largest number of person aged 65 and over both currently and in 2025, but its share of state total population ranks in the bottom among all states and District of Columbia: 46th in 2000 and 50th in 2025. Florida, however, with almost 18 percent of its population aged 65 and older shown by 2000 Census—highest in the nation, has the second largest number of elderly population only behind California. By 2025, Florida will remain the state with the highest percent of elderly population. Its elderly population will grow to over 26 percent of total population, from 17.6 percent in 2000. Other states with high proportions of elderly (14 percent and above) in 2000 include: Pennsylvania, West Virginia, Iowa, North Dakota, Rhode Island, Maine, South Dakota, and Arkansas.

Census projections in Table 2 show that in 2025, almost 55% of the nation's 62 million 65 and older population will live in the same nine states with over 1 million elderly population in 2000, plus North Carolina and Georgia. California would remain the state with the largest number of elderly population, with 6.4 million persons 65 and over, a modest 78% increase (close to U.S. average) from 2000. Florida, with 5.5 million elderly populations—a 94% increase, would stay in the second place. More than one in every four (26%) Floridians would be elderly in 2025. Around 2010, Texas will replace New York and become the state with the nation's third largest elderly population, and it would maintain its third place ranking in 2025.

Using today's proportion of elderly population in Florida—17.6 percent—as a threshold for measuring population aging, by 2025 a projected 38 additional states will exceed this threshold. Between 2000 and 2025, 14 states will double their number of elderly population, while 11 states would increase their proportions of persons aged 65 and over by more than 75%. Utah and Colorado would double their percentages of elderly population, from 9.7% and 8.5% in 2000 to 20.1% and 17.2%, respectively. Most of these states with fastest growth in elderly population are in the west, with the exception of North Carolina and Georgia. On the other hand, states projected to show slowest growth in elderly population are mostly located in the Midwest and Northeast.

As is the case for the nation, the percent of a state's population aged 65 and older in the future is a key indicator of the importance of an aging population with respect to a state's resources. The sheer size of the Baby-Boomer generation and the inevitable aging of this population cohort will have profound impacts on every aspect of our lives, and will continue to drive more and more public policy debate. The modest growth rate of population aged 65 and over in the near future provides an opportunity to plan for the certain, rapid growth during the period when baby Boom reaches age 65 years. A "window of opportunity" now exists for planners and policy makers to prepare for the aging of the Baby-Boomer generation. *(2)*

TRANSPORTATION AND INVESTMENT PLANNING: UNCERTAINTIES WITH AN AGING POPULATION

While demographers are relatively certain about the forthcoming aging population and its size, and researchers have documented very thoroughly the Baby-Boomers' socioeconomic profile, any behavioral comparisons, projections, and resultant impacts assessment are subject to various kinds of uncertainty. First and foremost, there will not be any elderly Baby-Boomer yet for another 10 years. It must be stressed that the observed groups or samples are today's or yesterday's elderly who were born before 1935 and undoubtedly were shaped differently from tomorrow's elderly boomers on whom the future focus will be. Second, the economic, financial, and health

conditions that boomers are expected to embrace around 2011 are big unknowns. Finally, what would be the interactions between Baby-Boomers' decision-making and public policy responses in place between now and 2010, or after? Nonetheless, a reasonable starting place is to map key areas that could be affected by the sheer size of Baby-Boomer generation retirement, and the rest of this paper will focus on interactions between aging population and long-range transportation planning.

Key Elements in Long-range transportation planning

The proposed federal transportation planning regulations clarify and reiterate that metropolitan transportation plans must be for a 20-year minimum forecasting period at the time of plan adoption. *(4)* Metropolitan transportation plans shall be subject to periodic review, revision, or reaffirmation, normally every three years in non-attainment and maintenance areas and five years in attainment areas. In addition, the plan update must reflect the most recent planning assumptions for current and future population, travel, land use, congestion, employment, economic activity and other related statistical measures for the metropolitan area. Thus, it is obvious that all metropolitan transportation plans just adopted or currently in the process of being updated should consider in their growth forecasts explicitly and throughout their planning elements consistently the effects of a significant proportion of elderly population after 2011.

Growth Forecasts

Every metropolitan transportation plan and investment strategy starts with growth forecasts, such as projections of future growth in jobs, workers, households, population, and income. Transportation demand models then incorporate these critical variables as key determinants in forecasting future travel demand. Thus, transportation infrastructure demand and investment planning are very sensitive to the growth projections.

The Analysis and Evaluation Tool—Transportation Models

Regional transportation models provide a common foundation for long-range transportation planning and investment decision making. Virtually all U.S. metropolitan areas use a similar approach to replicate and simulate regional travel behavior and forecast future transportation demand. This approach is known as the "four-step transportation model" because it consists of four distinct procedures—trip generation, trip distribution, mode choice, and traffic assignment. The two basic inputs to regional four-step transportation model are forecasts of future socio-economic growth and information about future transportation networks. In order to ensure that travel demand forecasts are consistent with socioeconomic growth forecasts, transportation model structures have to be able to reflect travel behaviors by different population/household subgroups.

Transportation Revenue Forecasts

Growth projections are also important in identifying funding possibilities and eventually making infrastructure investment funding decisions. Furthermore, federal transportation planning regulations require metropolitan transportation plans to be financially constrained, i.e., estimation of future levels of funding from various sources should be reasonably expected. Modest changes in the rate of economic growth can make substantial differences over time in the revenues that are available under the existing tax structure to finance public infrastructure investments. Similarly, significant shifts in demographics are also crucial in assessing future infrastructure demand.

LABOR FORCE, WORKERS AND EMPLOYMENT EFFECTS OF RETIRING BABY-BOOMERS

As aging Baby-Boomers begin retiring, the effects on labor force growth and the overall economy could be enormous. The current tight labor markets condition could be exacerbated, hindering prospects for economic growth and putting a greater burden on those remaining in the workforce. *(5)* According to projections published by the Bureau of Labor Statistics (BLS), between 2000 and 2025, the annual growth rate of the labor force is projected to be lower than it was in the second half of the 20th century. Labor force growth was especially fast in the 1970s partially due to the baby-boom generation reached working age and, on the other hand due to women's participation in the labor force became more common. Following a compound growth rate of 2.6 percent per year in the 1970s, the labor force growth rates fell to an annual compound rate of 1.6 percent and 1.1 percent in the 1980s, and 1990s, respectively. Between 2000 and 2015, the compound annual labor force growth rate is projected to be 1.0 percent,

and between 2015 and 2025, it is projected to be just 0.2 percent per year! This incredible slowdown in labor force growth between 2015 and 2025 is the expected and inevitable result of the Baby-Boomer generation retiring (Figure 2).

The above labor force projections through 2025 are based on combining population projections made by the Bureau of the Census (consistent with Table 1and Figure 1) and labor force participation rates underlying the 1998-2008 projections published by BLS. To illustrate the effect of the changing age distribution of the population on the labor force and labor force participation rates, the BLS estimates that if the 2025 population had the same age distribution as the 2015 population, the aggregate labor force participation rate would be 66 percent instead of 63 percent. *(5)* The projected labor force level would have almost 8 million more persons (Table 3).

There are two big questions/uncertainties associated with this extremely low projection of labor force growth between 2015 and 2025. First, the results are derived by using constant labor force participation rates underlying BLS 1998-2008 projections, and applying them to population levels projected by Bureau of the Census. However, It is logical to expect that labor force participation rates of all age groups would be induced to creep upward under a normal healthy economy and, therefore, a very tight labor market. Secondly, what would the economy look like beyond 2010 when the proportion of elderly population increases rapidly? Would it be a normal healthy one or would it be a depressed one?

Figure 2 presents annual compound growth rates for wage and salary payroll employment between 1950 and 2000, which track labor force growth closely. As growth in labor force is projected to decelerate considerably beyond 2015, what would be its effects on the economy and job creation? According to National Income and Product Account (NIPA) statistics, employee wage and salary compensation, on average between 1959 and 1999 contributed more than 70 percent of total personal income. Thus growth in wage and salary employment is critical to the health of the economy, and vice versa. Since the question is originated from an aging population, it is appropriate to investigate the socioeconomic profiles, including expenditures and income, etc. for the elderly people and compare them with persons in other age groups.

EXPENDITURES OF ELDERLY CONSUMER UNITS

As consumers age, both their level of spending and the way they allocate their spending changes. The so-called "life cycle events", such as getting a first job, marriage, having children, and retiring from employment can all have profound effects on spending patterns. *(6)* Consumer expenditure levels are important because they account for over 65 percent of Gross Domestic Product (GDP); their contractions or expansions directly affect the health of the economy. Consumer spending is also important particularly in generating revenues to finance transportation investment and improvement. Taxable sales and vehicle fuel taxes are the two primary revenue sources that are used to fund transportation projects. Significant swings in demographic components and, as a result, their income and spending patterns will have tremendous impacts on aggregate consumer expenditures and transportation revenue forecasts.

In 1999, 20.3 percent of U.S. consumer units[3] had a reference person[4] age 65 or older, and these consumer units accounted for just 14.5 percent of aggregate consumer spending. On the other side of the age spectrum, households headed by a reference person under the age of 35 accounted for 25.3 percent of total households but less than 22 percent of total consumer expenditures. The strongest consumption groups—households headed by persons aged between 35 and 64—accounted for the largest share of households (54.4 percent), and an even larger share of aggregate spending: close to 64 percent. Between 1984 and 1999, the percentage of all consumer units whose reference person is 65 or older rose to 20.3 percent from 19.8 percent. Although it was a rather small increase in percentage terms elderly consumer units during this period rose by almost 4.2 million households, or an average increase of 276,000 households per year (Table 4).

According to household projections by the Census Bureau, the share of consumer units headed by elderly person is projected to further edge up to about 22 percent by 2010, about 3.2 million higher than its level in 1999. Currently, the Census Bureau has not released household projections beyond 2010. However, applying Census Bureau's elderly population projections to an average size of 1.7 persons for elderly consumer units during the period of 1984-1999, the projected share of total households headed by person 65 or older would start to jump up considerably after 2010, and could reach 30% by 2030.

[3] The terms "consumer unit" and "household" are treated the same in BLS Consumer Expenditure Survey.

[4] The reference person is the first member mentioned by the respondent when asked to "Start with the name of the person or one of the persons who owns or rents the home." It is with respect to this person that the relationship of other consumer unit members is determined.

On average, the elderly household earned $26,581 (after-tax income) and spent $26,521 in 1999. Both their income and consumption levels, higher only than the youngest group, were about 60 percent of an average consumer unit across all age groups. In addition, the elderly consumer group allocated their expenditures very differently than did the other age groups, as indicated by the share of budget by major expenditure category (Table 5). The 65-and-older group did have the highest budget shares in two major expenditure categories: health care and cash contributions. Neither is included as part of transportation tax revenue bases. Elderly consumer units spent nearly 11.5 percent of their budget on health care, $1,060 more than an average consumer unit and $569 more than the next highest group headed by persons with ages between 55 and 64. They also allocated 6.1 percent—almost twice the average for all units—or $1,627 of their expenditures to cash contributions to churches, charities, organizations, and persons outside the households.

Consumer units 65 and older are not homogeneous. In fact consumer expenditure survey results report distinct differences in socioeconomic profiles as well as spending patterns between households aged 65 to 74 and those aged 75 and older. The older elderly group had fewer earners (0.2 vs. 0.6), vehicles (1.2 vs. 1.8), and smaller household size (1.5 vs. 1.9) than the younger elderly group. They were also less likely to own a vehicle (76% vs. 87%) and more likely to be headed by females (57% vs. 46%). With fewer earners, it is no surprise that older elderly group had both less income ($23,937 vs. $28,928) and spending ($22,800 vs. 27,567) than young elderly group. Substantial differences in expenditure levels are also evidenced, particularly in food, alcohol and beverages, transportation, entertainment, personal insurance and pension. In terms of budget shares among various expenditure groups, older elderly consumer units allocated a smaller proportion of their spending than younger elderly group did in most categories, except in housing, personal care products and services, cash contributions, and other miscellaneous items (Table 5).

Table 4 presents a historical perspective of changes in spending patterns for elderly consumer units from 1984 to 1999. While both elderly and all-age households have shown similar gains in real income before tax during the 1984-1999 periods (17.4% vs. 16.8%), real expenditures (in 1999 dollars) by elderly consumers have risen substantially—13.6 percent for those aged 65 to 74 and a whopping 27.5 percent for aged 75 and older. In contrast, average households across all age groups have had a relatively stable expenditure levels, rose just 5 percent in real dollars from 1984 to 1007. This indicates that the marginal propensities to consume (MPC) and total expenditures' income elasticity are much higher for elderly household than non-elderly household. As a result, share of aggregate consumer expenditures by older consumers has risen from 12.6 percent in 1984 to 14.5 percent in 1999. Or, to put it another way, those 65 and older once accounted for 1 in every 8consumer dollars spent; now they account for more than 1 in every 7consumer dollars spent. These significant gains were primarily due to the demographic advantages and income improvements from older elderly group (those 75 and older), not from the younger elderly. Share of aggregate expenditures by consumer group aged 65 to 74 was almost unchanged, edged up only 0.2 percent between 1984 and 1999.

In summary, as the proportion of elderly population and household in the nation is projected to increase significantly between 2010 and 2030, its share of aggregate consumer expenditures will also shoot up accordingly. However, with a relatively low income and expenditure levels for the elderly households, what would be the ramifications for less aggregated expenditures and therefore, a less robust economy? In addition, consumption patterns of elderly people tend to shift away from taxable items and vehicle-related taxes, which could be another negative for revenue sources that are specifically used to fund long-term transportation improvements. Long-range transportation revenue forecasts must now start to take these factors into account.

TRANSPORTATION DEMAND AND TRAVEL CHARACTERISTICS OF THE ELDERLY

Elderly households' spending on transportation also provides valuable insights about their travel demand, implications for future shifts in transportation revenues, and the way that transportation models must be adapted to forecast these variables more accurately. With an average spending of $4,385, or 16.5 percent of total expenditures in transportation category, the 65-and-older group spent considerably less than an average household across all age groups; the latter typically allocated $7,011 or 19.0 percent of total spending to transportation. As young elderly households further age into older elderly with less income and expenditures, they will reduce their transportation spending accordingly. However, older elderly tended to lower their expenditures on vehicle maintenance, repairs, and insurance proportionally less than in other transportation subcategories, such as gasoline and oil, vehicle purchase, rental, leases, finance, and public transportation (Table 5).

Expenditures on transportation strongly indicate that demand for transportation by the elderly, as measured by the number of trips and trip length, etc., is much lower than households in other age groups. This is so obvious from just looking at household size, number of earners, likely vehicle ownership, and average number of vehicles

owned. Elderly consumer units have smaller household size, fewer earners, are less likely to own a vehicle, and therefore, likely to generate fewer total trips and work trips, and less mobility. These inferences can also be validated by personal travel data with age references from the 1995 National Personal Travel Survey. As shown in Table 6, persons 65 and older made 26 percent less trips than did non-elderly persons in 1995. While younger elderly (age between 65 and 74) made slightly more non-work trips than non-elderly (3.2 vs. 2.9), non-work trips declined significantly for older elderly who are 75 and older (2.3). Elderly persons also traveled both less total miles and shorter distance per trip than non-elderly persons. Finally, times of day activity distribution were also different among various age groups: elderly persons tended to concentrate their activities during "off peak" hours, i.e., between 10 a.m. and 3 p.m., while other persons tend to spread activities more evenly among the three periods between 7 a.m. and 7 p.m.

Currently, most trip generation models use total number of households as a base to forecast future transportation demand. For example, daily trip generations are determined usually through a cross-tabulation of household by size and by income. However, as proportions of elderly household are projected to increase sharply between 2015 and 2030 and with a distinct transportation demand from others, additional stratification of household or population by their age references seems necessary to ensure an accurate forecast of transportation demand. In addition, since elderly would also travel in shorter distance per trip, transportation modelers should also look into whether bias could be caused in the trip distribution process if a significantly higher proportion of the trips is projected to be generated by elderly persons.

One last uncertainty about the impact from aging is regarding the economic well being of tomorrow's elderly. Between 1984 and 1999, consumer expenditures survey data support assertions of earlier studies that we are seeing a "golden age" of the golden years. *(7)* Consumer units aged 65 and older, in particular those above 75, have seen their real income and spending go up significantly throughout the period. Evidence, such as the number of vehicles owned by younger and older elderly going up from 1.5 and 0.8 in 1984 to 1.8 and 1.2 in 1999 and a very high MPC for transportation, suggest that elderly persons had enjoyed tremendous improvements in both health and mobility conditions. These included older people's licensing rates, automobile ownership, trip-making abilities, and distance traveled. Since the number of earners was unchanged and household size actually went down between 1984 and 1999 for elderly consumer units, the rise in real income and expenditure levels may reflect the "exuberance" in the financial market during the period in question. *(8)* Elderly consumers are more likely than consumers in other age groups to live on proceeds from selling financial assets, or on dividend, and other income derived from financial assets. Will this golden age still be there when Baby-Boomers reach their own golden years after 2011?

CONCLUSIONS AND POLICY IMPLICATIONS

This paper examines the magnitude of the aging population that the nation is going to embrace after 2010. The likely impacts on regional transportation planning from aging are discussed in three areas: growth forecasts—labor force, workers, and employment growth, transportation revenue forecasts—expenditure patterns and levels of the elderly consumer units, and transportation modeling implication—elderly person's travel characteristics, including trip making, distance, and time-of-day activity distributions. The data and analysis results suggest that significant increase in elderly population would have profound impacts on all three key areas in transportation planning.

Following is a list of key regional planning variables, analysis tools, and policy considerations that could be significantly affected by an aging population trend.

1. Labor force, workers, and employment growth.
2. General economic variables:

- Consumer expenditures—affect transportation revenue forecast. For example, elderly households generally have less income and expenditures than non-elderly households; they also spend differently, with more on non-taxable categories such as health care and charitable contributions and less on food away from home, vehicle purchase, maintenance, gasoline and oil.
- Income growth—affect regional transportation models in numerous ways: automobile ownership, mode choice, trip generations.
- Economic growth—the foundation for every planning element.

3. Regional transportation models:

- Travel behaviors of aging and elderly households—trip generations, trip purposes and distributions, time of travel, trip length, and mode choice.
- Socioeconomic profile of elderly households: household size, workers, automobile ownership, etc.

- Questions have to be raised regarding whether current transportation modeling tools (calibrated based on current base year socio-economic estimation and traffic counts) are appropriate to carry out analysis for an aging society after 2010.

4. Policy uncertainty—public policy initiatives affecting the elderly could also affect the baseline forecast. For example, it is likely that both social security retirement system and immigration policy will have to be modified in order to increase labor force supply and employment growth after 2010.
5. Transportation planning—transportation demand, safety and security issues for elderly people.

It is recommended that future transportation planning should start to consider explicitly in the growth forecasts, and consistently throughout the plan components about the effects of a significant proportion of elderly population. Uncertainties regarding the effects on overall economy and Baby-Boomers' behaviors and decision making after 2010 call for continuing research and monitoring. The modest growth rate of population aged 65 and over in the next few years provides an opportunity to plan for the certain, rapid growth during the period when Baby-Boomers reach age 65. A "window of opportunity" now exists for planners and policy makers to prepare for the aging of Baby-Boomer generation.

REFERENCES

1. Tafoya, Sonya M. and Hans P. Johnson 2000. *Graying in the Golden State: Demographic and Economic Trends of Older Californians*, California Counts: Population Trends and Profiles, Vol. 2 No. 2, November 2000, Public Policy Institute of California, San Francisco, CA.
2. Hobbs, Frank B. and Bonnie L. Damon 1996. *65+ in the United States*, Current Population Reports, Special Studies, P23-190. U.S. Government Printing Office, Washington, DC, 1996.
3. Campbell, Paul R. 1996. *Population Projections for States, by Age, Sex, Race, and Hispanic Origin: 1995 to 2025*, U.S. Bureau of the Census, Population Division, PPL-47.
4. *Statewide Transportation Planning; Metropolitan Transportation Planning*, 65 Fed. Reg. 102, 33922 (2000) (to be codified at 23 C.F.R. pt. 450 and 1410 and 49 C.F.R. pt. 613 and 621) (proposed May 25, 2000).
5. Fullerton, Howard N., Jr. 1999. *Labor Force Participation: 75 Years of Change, 1950-98 and 1998-2025*, Monthly Labor Review, December 1999.
6. U.S. Department of Labor, Bureau of Labor Statistics 2000. *Issues in Labor Statistics: Spending Patterns by Age*, Summary 00-16, August 2000.
7. Paulin, Geoffrey D. 2000. *Expenditure Patterns of Older Americans, 1984-1997*, Monthly Labor Review, May 2000.
8. Hitschler, Pamela B. 1993. *Spending by Older Consumers: 1980 and 1990 Compared*, Monthly Labor Review, May 1993.

LIST OF TABLES AND FIGURES

TABLE 1 Elderly Population by Age and Share of Total Population 1900 to 2000 and Projected to 2100

	Age Groups								
	Total,	65 and Over		65 - 74		75 - 84		85 and Over	
Year	All Ages	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1900	75,995	3,081	4.05	2,187	2.88	772	1.02	122	0.16
1910	91,972	3,949	4.29	2,793	3.04	989	1.08	167	0.18
1920	105,711	4,933	4.67	3,464	3.28	1,259	1.19	210	0.20
1930	122,775	6,634	5.40	4,721	3.85	1,641	1.34	272	0.22
1940	131,669	9,019	6.85	6,376	4.84	2,278	1.73	365	0.28
1950	150,697	12,269	8.14	8,415	5.58	3,277	2.17	577	0.38
1960	179,323	16,560	9.23	10,997	6.13	4,634	2.58	929	0.52
1970	203,302	19,980	9.83	12,447	6.12	6,124	3.01	1,409	0.69
1980	226,546	25,550	11.28	15,581	6.88	7,729	3.41	2,240	0.99
1990	248,710	31,242	12.56	18,107	7.28	10,055	4.04	3,080	1.24
2000	281,422	34,992	12.43	18,391	6.54	12,361	4.39	4,240	1.51
Census Projection: Middle Series									
2010	299,862	39,715	13.24	21,154	7.05	12,775	4.26	5,786	1.93
2020	324,927	53,733	16.54	31,462	9.68	15,508	4.77	6,763	2.08
2025	337,815	62,641	18.54	35,603	10.54	19,597	5.80	7,441	2.20
2030	351,070	70,319	20.03	37,722	10.74	23,667	6.74	8,931	2.54
2040	377,350	77,177	20.45	33,904	8.98	28,989	7.68	14,284	3.79
2050	403,687	81,999	20.31	36,014	8.92	26,633	6.60	19,352	4.79
2060	432,011	89,840	20.80	40,451	9.36	28,973	6.71	20,417	4.73
2070	463,639	97,585	21.05	41,303	8.91	33,126	7.14	23,156	4.99
2080	497,830	107,606	21.62	45,267	9.09	34,394	6.91	27,945	5.61
2090	533,605	119,079	22.32	49,002	9.18	38,280	7.17	31,796	5.96
2100	570,954	131,163	22.97	52,125	9.13	42,009	7.36	37,030	6.49
Census Projection: Highest Series									
2010	310,910	40,510	13.03	21,548	6.93	13,015	4.19	5,947	1.91
2020	354,642	56,194	15.85	32,630	9.20	16,270	4.59	7,293	2.06
2025	380,397	66,375	17.45	37,334	9.81	20,803	5.47	8,238	2.17
2030	409,604	75,704	18.48	40,161	9.80	25,435	6.21	10,107	2.47
2040	475,949	87,111	18.30	38,173	8.02	32,154	6.76	16,784	3.53
2050	552,757	98,313	17.79	43,095	7.80	31,353	5.67	23,865	4.32
2060	642,752	114,037	17.74	50,693	7.89	36,220	5.64	27,124	4.22
2070	749,257	131,412	17.54	55,166	7.36	43,333	5.78	32,914	4.39
2080	873,794	155,405	17.79	65,525	7.50	47,912	5.48	41,967	4.80
2090	1,017,344	185,110	18.20	76,258	7.50	57,715	5.67	51,137	5.03
2100	1,182,390	220,073	18.61	87,657	7.41	68,021	5.75	64,394	5.45
Census Projection: Lowest Series									
2010	291,413	39,067	13.41	20,839	7.15	12,578	4.32	5,650	1.94
2020	303,664	51,779	17.05	30,544	10.06	14,901	4.91	6,334	2.09
2025	308,229	59,721	19.38	34,262	11.12	18,649	6.05	6,810	2.21
2030	311,656	66,188	21.24	35,874	11.51	22,291	7.15	8,023	2.57
2040	314,673	70,017	22.25	30,980	9.85	26,614	8.46	12,422	3.95
2050	313,546	71,239	22.72	31,692	10.11	23,409	7.47	16,139	5.15
2060	310,533	75,344	24.26	34,782	11.20	24,538	7.90	16,025	5.16
2070	306,589	78,736	25.68	33,953	11.07	27,419	8.94	17,364	5.66
2080	300,747	81,546	27.11	34,062	11.33	27,194	9.04	20,290	6.75
2090	292,584	83,400	28.50	33,811	11.56	27,688	9.46	21,902	7.49
2100	282,706	83,975	29.70	32,688	11.56	27,840	9.85	23,448	8.29

Source: "(NP-D1-A) Annual Projections of the Resident Population by Age, Sex, Race, and Hispanic Origin: Lowest, Middle, Highest, and Zero International Migration Series, 1999 to 2100," Released by U.S. Census Bureau, Population Division, Population Projections Branch, Last Revised: November 02, 2000 at 03:14:40 PM
Census Internet download site: http://www.census.gov/population/www/projections/natdet.html

TABLE 2 Population 65 and Over by State and Share of Total State Population 1995 to 2025

	Persons 65 and Over						Percent of Population 65 and Over						Share of U.S. Population 65 and Over					
	1995	2000	2000*	2005	2015	2025	1995	2000	2000*	2005	2015	2025	1995	2000	2000*	2005	2015	2025
Alabama	552	582	580	613	785	1,069	13.0%	13.1%	13.0%	13.2%	15.8%	20.5%	1.6%	1.7%	1.7%	1.7%	1.7%	1.7%
Alaska	30	38	36	46	67	92	5.0%	5.8%	5.7%	6.6%	8.5%	10.4%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Arizona	560	635	668	707	967	1,368	13.3%	13.2%	13.0%	13.5%	16.6%	21.3%	1.7%	1.8%	1.9%	2.0%	2.1%	2.2%
Arkansas	360	377	374	402	533	731	14.5%	14.3%	14.0%	14.6%	18.2%	23.9%	1.1%	1.1%	1.1%	1.1%	1.2%	1.2%
California	3,463	3,387	3,596	3,454	4,465	6,424	11.0%	10.4%	10.6%	10.0%	10.8%	13.0%	10.3%	9.8%	10.3%	9.5%	9.8%	10.4%
Colorado	375	452	416	523	745	1,044	10.0%	10.8%	9.7%	11.7%	15.4%	20.1%	1.1%	1.3%	1.2%	1.4%	1.6%	1.7%
Connecticut	467	461	470	456	526	671	14.3%	14.0%	13.8%	13.7%	15.0%	17.9%	1.4%	1.3%	1.3%	1.3%	1.2%	1.1%
Delaware	91	97	102	101	124	165	12.7%	12.6%	13.0%	12.6%	14.9%	19.2%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
District of Columbia	77	69	70	65	71	92	13.9%	13.2%	12.2%	12.3%	12.0%	14.0%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%
Florida	2,631	2,755	2,808	2,911	3,825	5,453	18.6%	18.1%	17.6%	17.9%	20.7%	26.3%	7.8%	7.9%	8.0%	8.0%	8.4%	8.8%
Georgia	718	779	785	852	1,175	1,668	10.0%	9.9%	9.6%	10.1%	12.8%	16.9%	2.1%	2.2%	2.2%	2.4%	2.6%	2.7%
Hawaii	150	157	161	164	211	289	12.6%	12.5%	13.3%	12.2%	13.6%	15.9%	0.4%	0.5%	0.5%	0.5%	0.5%	0.5%
Idaho	132	157	146	182	261	374	11.3%	11.7%	11.3%	12.3%	16.1%	21.5%	0.4%	0.5%	0.4%	0.5%	0.6%	0.6%
Illinois	1,484	1,484	1,500	1,494	1,735	2,234	12.5%	12.3%	12.1%	12.2%	13.5%	16.6%	4.4%	4.3%	4.3%	4.1%	3.8%	3.6%
Indiana	734	763	753	794	963	1,260	12.6%	12.6%	12.4%	12.8%	15.0%	19.2%	2.2%	2.2%	2.2%	2.2%	2.1%	2.0%
Iowa	432	442	436	452	533	686	15.2%	15.2%	14.9%	15.4%	17.8%	22.6%	1.3%	1.3%	1.2%	1.2%	1.2%	1.1%
Kansas	350	359	356	366	447	605	13.6%	13.5%	13.3%	13.3%	15.2%	19.5%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Kentucky	487	509	505	538	686	917	12.6%	12.7%	12.5%	13.1%	16.2%	21.3%	1.5%	1.5%	1.4%	1.5%	1.5%	1.5%
Louisiana	494	523	517	555	705	945	11.4%	11.8%	11.6%	12.2%	14.6%	18.4%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Maine	173	172	183	173	219	304	13.9%	13.7%	14.4%	13.5%	16.1%	21.4%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Maryland	572	589	599	611	763	1,029	11.3%	11.2%	11.3%	11.2%	13.0%	16.4%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%
Massachusetts	861	843	860	827	965	1,252	14.2%	13.6%	13.5%	13.1%	14.7%	18.1%	2.6%	2.4%	2.5%	2.3%	2.1%	2.0%
Michigan	1,182	1,197	1,219	1,211	1,421	1,821	12.4%	12.4%	12.3%	12.4%	14.3%	18.1%	3.5%	3.4%	3.5%	3.3%	3.1%	2.9%
Minnesota	573	596	594	627	794	1,099	12.4%	12.3%	12.1%	12.5%	15.0%	19.9%	1.7%	1.7%	1.7%	1.7%	1.7%	1.8%
Mississippi	331	344	344	363	456	615	12.3%	12.2%	12.1%	12.5%	15.0%	19.6%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Missouri	740	755	755	774	942	1,258	13.9%	13.6%	13.5%	13.5%	15.7%	20.1%	2.2%	2.2%	2.2%	2.1%	2.1%	2.0%
Montana	114	128	121	143	198	274	13.1%	13.5%	13.4%	14.2%	18.5%	24.4%	0.3%	0.4%	0.3%	0.4%	0.4%	0.4%
Nebraska	228	239	232	248	303	405	13.9%	14.0%	13.6%	14.1%	16.4%	21.0%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%
Nevada	176	219	219	257	350	486	11.5%	11.7%	11.0%	12.4%	16.1%	21.0%	0.5%	0.6%	0.6%	0.7%	0.8%	0.8%
New Hampshire	136	142	148	148	194	273	11.8%	11.6%	12.0%	11.6%	14.1%	19.0%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
New Jersey	1,091	1,090	1,113	1,093	1,279	1,654	13.7%	13.3%	13.2%	13.0%	14.3%	17.3%	3.3%	3.1%	3.2%	3.0%	2.8%	2.7%
New Mexico	183	206	212	228	310	441	10.9%	11.1%	11.7%	11.3%	13.5%	16.9%	0.5%	0.6%	0.6%	0.6%	0.7%	0.7%
New York	2,424	2,358	2,448	2,321	2,627	3,263	13.4%	13.0%	12.9%	12.7%	13.9%	16.5%	7.2%	6.8%	7.0%	6.4%	5.8%	5.3%
North Carolina	899	991	969	1,081	1,445	2,004	12.5%	12.7%	12.0%	13.1%	16.3%	21.4%	2.7%	2.9%	2.8%	3.0%	3.2%	3.2%
North Dakota	93	99	94	103	126	166	14.5%	15.0%	14.7%	15.2%	17.9%	22.8%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Ohio	1,491	1,525	1,508	1,554	1,807	2,305	13.4%	13.5%	13.3%	13.6%	15.6%	19.6%	4.4%	4.4%	4.3%	4.3%	4.0%	3.7%
Oklahoma	443	472	456	504	654	888	13.5%	14.0%	13.2%	14.4%	17.3%	21.9%	1.3%	1.4%	1.3%	1.4%	1.4%	1.4%
Oregon	426	471	438	522	741	1,054	13.6%	13.9%	12.8%	14.4%	18.6%	24.2%	1.3%	1.4%	1.3%	1.4%	1.6%	1.7%
Pennsylvania	1,916	1,899	1,919	1,867	2,092	2,659	15.9%	15.6%	15.6%	15.2%	16.8%	21.0%	5.7%	5.5%	5.5%	5.2%	4.6%	4.3%
Rhode Island	156	148	152	143	162	214	15.8%	14.8%	14.5%	14.1%	15.1%	18.8%	0.5%	0.4%	0.4%	0.4%	0.4%	0.3%
South Carolina	440	478	485	517	696	963	12.0%	12.4%	12.1%	12.8%	15.9%	20.7%	1.3%	1.4%	1.4%	1.4%	1.5%	1.6%
South Dakota	105	110	108	114	137	188	14.4%	14.2%	14.3%	14.1%	16.3%	21.7%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Tennessee	658	707	703	760	994	1,355	12.5%	12.5%	12.4%	12.7%	15.6%	20.3%	2.0%	2.0%	2.0%	2.1%	2.2%	2.2%
Texas	1,915	2,101	2,073	2,297	3,089	4,364	10.2%	10.4%	9.9%	10.7%	12.7%	16.1%	5.7%	6.1%	5.9%	6.4%	6.8%	7.0%
Utah	172	202	190	234	338	495	8.8%	9.2%	8.5%	9.7%	12.7%	17.2%	0.5%	0.6%	0.5%	0.6%	0.7%	0.8%
Vermont	71	73	78	77	101	138	12.1%	11.8%	12.7%	12.1%	15.3%	20.4%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
Virginia	737	788	792	845	1,109	1,515	11.1%	11.3%	11.2%	11.5%	14.0%	17.9%	2.2%	2.3%	2.3%	2.3%	2.4%	2.4%
Washington	628	685	662	757	1,081	1,580	11.6%	11.7%	11.2%	12.1%	15.3%	20.2%	1.9%	2.0%	1.9%	2.1%	2.4%	2.6%
West Virginia	279	287	277	296	360	460	15.3%	15.6%	15.3%	16.0%	19.4%	24.9%	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%
Wisconsin	683	705	703	730	893	1,200	13.3%	13.2%	13.1%	13.3%	15.7%	20.5%	2.0%	2.0%	2.0%	2.0%	2.0%	1.9%
Wyoming	54	62	58	71	101	145	11.3%	11.8%	11.7%	12.5%	15.8%	20.9%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
U.S. Total**	33,537	34,707	34,992	36,171	45,571	61,954	12.8%	12.6%	12.4%	12.6%	14.7%	18.5%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Note: *2000 Census state figures, others are July 1 estimates and projections by Bureau of the Census.

** U.S. Total excludes Puerto Rico.

Source: Census 2000 figures from *"Demographic Profiles: Census 2000."*

Census Internet download site: http://blue.census.gov/Press-Release/www/2001/demoprofile.html

Projections of the Population, By Age and Sex, of States: 1995 to 2025, Series A Projections. For more details, see Campbell, Paul R., 1996, *Population Projections for States, by Age, Sex, Race, and Hispanic Origin: 1995 to 2025, U.S. Bureau of the Census, Population Division, PPL-47.*

Census Internet download site: http://blue.census.gov/population/projections/state/stpjage.txt

TABLE 3 Population Jobs Labor Force Participation Rates 1950 to 1998 and Projections 2015 to 2025

	1950	1960	1970	1980	1990	1998	2015	2025
Civilian noninstitutional population (1,000)	104,995	117,245	137,085	167,745	189,164	205,220	242,940	262,095
16 to 24	19,223	20,460	29,841	37,178	33,421	33,237	38,487	39,093
25 to 34	23,013	21,998	24,435	36,558	42,976	38,778	41,063	42,636
35 to 44	20,681	23,437	22,489	25,578	37,719	44,299	38,618	42,994
45 to 54	17,240	20,601	23,059	22,563	25,081	34,373	41,798	38,116
55 to 64	13,469	15,409	18,250	21,520	20,720	22,296	39,423	39,619
65 and older	11,363	15,336	19,007	24,350	29,247	32,238	43,550	59,637
Non-farm wage and salary jobs (1,000)	45,197	54,189	70,880	90,406	109,403	125,865	n.a.	n.a.
Labor force participation rates (Percent)	59.2	59.4	60.4	63.8	66.4	67.1	66.9	63.2
16 to 24	59.9	56.4	59.8	68.1	67.3	65.9	67.1	66.1
25 to 34	63.5	65.4	69.7	79.9	83.6	84.6	86.6	86.4
35 to 44	67.5	69.4	73.1	80.0	85.2	84.7	87.0	86.9
45 to 54	66.4	72.2	73.5	74.9	80.7	82.5	85.2	85.0
55 to 64	56.7	60.9	61.8	55.7	55.9	59.3	64.8	63.1
65 and older	26.7	20.8	17.0	12.5	11.8	11.9	14.5	14.0
Civilian labor force (1,000)	62,157	69,644	82,799	107,021	125,605	137,703	162,527	165,644
16 to 24	11,515	11,539	17,845	25,318	22,492	21,903	25,825	25,840
25 to 34	14,613	14,387	17,031	29,210	35,928	32,806	35,561	36,838
35 to 44	13,960	16,265	16,439	20,462	32,137	37,521	33,598	37,362
45 to 54	11,447	14,874	16,948	16,900	20,240	28,358	35,612	32,399
55 to 64	7,637	9,384	11,279	11,987	11,582	13,222	25,546	25,000
65 and older	3,034	3,190	3,231	3,044	3,451	3,836	6,315	8,349
Age of Baby-Boomers	birth to 4	birth to 14	6 to 24	16 to 34	26 to 44	34 to 52	51 to 69	61 to 79

	Changes (1,000)						
	1950-60	1960-70	1970-80	1980-90	1990-98	98-2015	2015-25
Civilian noninstitutional population	12,250	19,840	30,660	21,419	16,056	37,720	19,155
16 to 24	1,237	9,381	7,337	-3,757	-184	5,250	606
25 to 34	-1,015	2,437	12,123	6,418	-4,198	2,285	1,573
35 to 44	2,756	-948	3,089	12,141	6,580	-5,681	4,376
45 to 54	3,361	2,458	-496	2,518	9,292	7,425	-3,682
55 to 64	1,940	2,841	3,270	-800	1,576	17,127	196
65 and older	3,973	3,671	5,343	4,897	2,991	11,312	16,087
Non-farm wage and salary jobs	8,992	16,691	19,526	18,997	16,462	n.a.	n.a.
Civilian labor force	7,486	13,156	24,222	18,584	12,098	24,824	3,117
16 to 24	25	6,305	7,473	-2,826	-589	3,922	16
25 to 34	-227	2,645	12,179	6,718	-3,122	2,754	1,277
35 to 44	2,306	174	4,023	11,674	5,385	-3,924	3,764
45 to 54	3,427	2,074	-49	3,341	8,117	7,254	-3,213
55 to 64	1,747	1,894	708	-404	1,639	12,325	-547
65 and older	156	41	-187	407	385	2,478	2,034

	Annual Compound Growth Rates (Percent)						
	1950-60	1960-70	1970-80	1980-90	1990-98	98-2015	2015-25
Civilian noninstitutional population	1.1%	1.6%	2.0%	1.2%	0.8%	1.7%	0.8%
16 to 24	0.6%	3.8%	2.2%	-1.1%	-0.1%	1.5%	0.2%
25 to 34	-0.5%	1.1%	4.1%	1.6%	-1.0%	0.6%	0.4%
35 to 44	1.3%	-0.4%	1.3%	4.0%	1.6%	-1.4%	1.1%
45 to 54	1.8%	1.1%	-0.2%	1.1%	3.2%	2.0%	-0.9%
55 to 64	1.4%	1.7%	1.7%	-0.4%	0.7%	5.9%	0.0%
65 and older	3.0%	2.2%	2.5%	1.8%	1.0%	3.1%	3.2%
Non-farm wage and salary jobs	1.8%	2.7%	2.5%	1.9%	1.4%	n.a.	n.a.
Civilian labor force	1.1%	1.7%	2.6%	1.6%	0.9%	1.7%	0.2%
16 to 24	0.0%	4.5%	3.6%	-1.2%	-0.3%	1.7%	0.0%
25 to 34	-0.2%	1.7%	5.5%	2.1%	-0.9%	0.8%	0.4%
35 to 44	1.5%	0.1%	2.2%	4.6%	1.6%	-1.1%	1.1%
45 to 54	2.7%	1.3%	0.0%	1.8%	3.4%	2.3%	-0.9%
55 to 64	2.1%	1.9%	0.6%	-0.3%	1.3%	6.8%	-0.2%
65 and older	0.5%	0.1%	-0.6%	1.3%	1.1%	5.1%	2.8%

Source: Howard N. Fullerton, Jr., *Labor Force Participation: 75 Years of Change, 1950-98 and 1998-2025,* Monthly Labor Review, December 1999.

Internet download site: http://www.bls.gov/opub/mlr/1999/12/art1full.pdf

TABLE 4 Selected Consumer Expenditure Survey (CES) Characteristics by Age of Reference Persons 1984 to 1999

Item	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Percent change, 1984-99
Number of households (1,000):																	
All ages	90,223	91,564	94,044	94,150	94,862	95,818	96,968	97,918	100,019	100,049	102,210	103,123	104,212	105,576	107,182	108,465	20.2%
65 and above	17,866	18,645	19,317	19,772	19,603	20,322	20,079	20,702	21,763	21,860	21,501	21,793	21,553	21,936	21,831	22,015	23.2%
As a percent of all ages	19.8%	20.4%	20.5%	21.0%	20.7%	21.2%	20.7%	21.1%	21.8%	21.8%	21.0%	21.1%	20.7%	20.8%	20.4%	20.3%	2.5%
65 to 74	10,761	11,302	10,832	11,578	11,319	11,848	11,318	11,935	11,959	11,934	12,038	11,933	11,742	12,109	11,874	11,578	7.6%
As a percent of all ages	11.9%	12.3%	11.5%	12.3%	11.9%	12.4%	11.7%	12.2%	12.0%	11.9%	11.8%	11.6%	11.3%	11.5%	11.1%	10.7%	-10.5%
75 and above	7,105	7,343	8,485	8,194	8,284	8,474	8,761	8,767	9,804	9,926	9,463	9,860	9,811	9,827	9,957	10,437	46.9%
As a percent of all ages	7.9%	8.0%	9.0%	8.7%	8.7%	8.8%	9.0%	9.0%	9.8%	9.9%	9.3%	9.6%	9.4%	9.3%	9.3%	9.6%	22.2%
Household Size																	
All ages	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	-3.8%
65 and above	1.8	1.8	1.8	1.7	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.7	1.7	1.7	-4.5%
65 to 74	1.9	2.0	1.9	1.9	2.0	1.9	1.9	1.9	1.8	1.9	1.8	1.9	1.9	1.9	1.9	1.9	0.0%
75 and above	1.6	1.6	1.6	1.5	1.5	1.6	1.6	1.5	1.6	1.5	1.5	1.5	1.6	1.5	1.5	1.5	-6.3%
Number of Earners																	
All ages	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	-7.1%
65 and above	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	-9.3%
65 to 74	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.0%
75 and above	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0%
Number of vehicles																	
All ages	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	2.0	2.0	1.9	0.0%
65 and above	1.2	1.3	1.3	1.3	1.4	1.4	1.5	1.4	1.5	1.5	1.4	1.4	1.5	1.5	1.5	1.5	22.8%
65 to 74	1.5	1.6	1.6	1.6	1.7	1.7	1.8	1.7	1.8	1.8	1.6	1.8	1.8	1.8	1.8	1.8	20.0%
75 and above	0.8	0.9	1.0	0.9	1.0	1.1	1.0	1.0	1.1	1.1	1.1	1.0	1.1	1.2	1.2	1.2	50.0%
Income before taxes (1999 Constant dollar):																	
All ages	37,624	38,905	38,701	40,075	40,192	42,064	40,648	41,468	40,200	40,201	40,673	40,358	40,364	41,443	42,541	43,951	16.8%
65 and above	22,651	24,577	23,556	23,819	25,003	26,454	24,017	24,469	24,806	24,431	25,401	24,212	23,812	24,876	24,541	26,581	17.4%
As a percent of all ages	60.2%	63.2%	60.9%	59.4%	62.2%	62.9%	59.1%	59.0%	61.7%	60.8%	62.5%	60.0%	59.0%	60.0%	57.7%	60.5%	0.5%
65 to 74	25,206	28,166	27,170	27,275	29,157	29,627	27,407	27,795	27,528	28,210	28,030	27,934	27,421	28,537	27,634	28,928	14.8%
As a percent of all ages	67.0%	72.4%	70.2%	68.1%	72.5%	70.4%	67.4%	67.0%	68.5%	70.2%	68.9%	69.2%	67.9%	68.9%	65.0%	65.8%	-1.8%
75 and above	18,780	19,054	18,942	18,936	19,303	21,880	19,675	19,873	21,435	19,821	22,051	19,684	19,515	20,163	20,676	23,937	27.5%
As a percent of all ages	49.9%	49.0%	48.9%	47.3%	48.0%	52.0%	48.4%	47.9%	53.3%	49.3%	54.2%	48.8%	48.3%	48.7%	48.6%	54.5%	9.1%
Average annual expenditures (1999 Constant dollar):																	
All ages	35,236	36,370	36,278	35,804	36,463	37,364	36,177	36,224	35,441	35,386	35,671	35,270	35,886	36,142	36,320	36,995	5.0%
65 and above	22,392	24,770	23,066	23,654	24,359	25,483	23,646	24,087	24,481	24,583	25,324	24,322	25,515	25,341	25,267	26,521	18.4%
As a percent of all ages	63.5%	68.1%	63.6%	66.1%	66.8%	68.2%	65.4%	66.5%	69.1%	69.5%	71.0%	69.0%	71.1%	70.1%	69.6%	71.7%	12.8%
65 to 74	25,402	27,774	26,610	27,700	28,335	28,419	26,642	27,600	27,148	27,332	28,170	27,632	29,454	28,848	28,445	29,864	17.6%
As a percent of all ages	72.1%	76.4%	73.4%	77.4%	77.7%	76.1%	73.6%	76.2%	76.6%	77.2%	79.0%	78.3%	82.1%	79.8%	78.3%	80.7%	12.0%
75 and above	17,834	20,147	18,542	17,936	18,785	21,388	19,694	19,305	21,130	21,156	21,674	20,302	20,815	21,050	21,451	22,884	28.3%
As a percent of all ages	50.6%	55.4%	51.1%	50.1%	51.5%	57.2%	54.4%	53.3%	59.6%	59.8%	60.8%	57.6%	58.0%	58.2%	59.1%	61.9%	22.2%
Average annual expenditures on transportation (1999 Constant dollar):																	
All ages	6,901	7,102	7,360	6,746	7,172	6,969	6,526	6,301	6,208	6,287	6,794	6,574	6,777	6,702	6,762	7,011	1.6%
65 and above	3,796	4,160	3,861	3,659	4,281	4,154	3,675	3,670	3,907	3,552	4,015	3,688	4,237	3,957	4,114	4,385	15.5%
As a percent of all ages	55.0%	58.6%	52.5%	54.2%	59.7%	59.6%	56.3%	58.2%	62.9%	56.5%	59.1%	56.1%	62.5%	59.0%	60.8%	62.5%	13.7%
65 to 74	4,806	5,057	4,962	4,801	5,598	4,964	4,414	4,778	4,677	4,314	4,727	4,899	5,494	4,822	5,082	5,457	13.6%
As a percent of all ages	69.6%	71.2%	67.4%	71.2%	78.0%	71.2%	67.6%	75.8%	75.3%	68.6%	69.6%	74.5%	81.1%	71.9%	75.2%	77.8%	11.8%
75 and above	2,266	2,779	2,456	2,044	2,479	3,020	2,716	2,159	2,966	2,632	3,109	2,225	2,732	2,891	2,961	3,196	41.1%
As a percent of all ages	32.8%	39.1%	33.4%	30.3%	34.6%	43.3%	41.6%	34.3%	47.8%	41.9%	45.8%	33.8%	40.3%	43.1%	43.8%	45.6%	38.9%
Share of aggregate expenditures																	
All Other Age Groups	87.4%	86.1%	86.9%	86.1%	86.2%	85.5%	86.5%	85.9%	85.0%	84.8%	85.1%	85.4%	85.3%	85.4%	85.8%	85.5%	-2.2%
65 and above	12.6%	13.9%	13.1%	13.9%	13.8%	14.5%	13.5%	14.1%	15.0%	15.2%	14.9%	14.6%	14.7%	14.6%	14.2%	14.5%	15.6%
65 to 74	8.6%	9.4%	8.4%	9.5%	9.3%	9.4%	8.6%	9.3%	9.2%	9.2%	9.3%	9.1%	9.2%	9.2%	8.7%	8.6%	0.2%
75 and above	4.0%	4.4%	4.6%	4.4%	4.5%	5.1%	4.9%	4.8%	5.8%	5.9%	5.6%	5.5%	5.5%	5.4%	5.5%	5.9%	49.3%
Share of aggregate expenditures on Transportation																	
All Other Age Groups	89.1%	88.1%	89.2%	88.6%	87.7%	87.4%	88.3%	87.7%	86.3%	87.7%	87.6%	88.1%	87.1%	87.7%	87.6%	87.3%	-2.0%
65 and above	10.9%	11.9%	10.8%	11.4%	12.3%	12.6%	11.7%	12.3%	13.7%	12.3%	12.4%	11.9%	12.9%	12.3%	12.4%	12.7%	16.6%
65 to 74	8.3%	8.8%	7.8%	8.8%	9.3%	8.8%	7.9%	9.2%	9.0%	8.2%	8.2%	8.6%	9.1%	8.3%	8.3%	8.3%	0.0%
75 and above	2.6%	3.1%	3.0%	2.6%	3.0%	3.8%	3.8%	3.1%	4.7%	4.2%	4.2%	3.2%	3.8%	4.0%	4.1%	4.4%	69.7%

Source: "Consumer Expenditure Surveys, 1984-1999," released by Bureau of Labor Statistics, Department of Labor
BLS Internet download site: http://www.bls.gov/csxhome.htm?3

TABLE 5 Consumer Expenditure Data Average Annual Expenditures Share of Budget by Major Expenditure Category by Age Group 1999

Item	All consumer units	Under 25	25-34	35-44	45-54	55-64	65 and over	65-74	75 and over
Number of consumer units (in thousands)	108,465	8,164	19,332	24,405	20,903	13,647	22,015	11,578	10,437
Income before taxes [a/]	$43,951	$18,276	$42,470	$53,579	$59,822	$49,436	$26,581	$28,928	$23,937
Income after taxes [a/]	$40,652	$17,431	$39,405	$49,616	$54,459	$45,193	$25,325	$27,567	$22,800
Age of the reference person	47.9	21.4	29.7	39.5	49.2	59.1	74.8	69.3	80.8
Average number of persons in consumer units	2.5	1.8	2.9	3.2	2.7	2.2	1.7	1.9	1.5
Average Number of children under 18.	0.7	0.4	1.1	1.3	0.6	0.2	0.1	0.1	< 0.05
Average Number of persons 65 and over.	0.3	< 0.05	< 0.05	< 0.05	< 0.05	0.1	1.4	1.4	1.3
Average Number of earners.	1.3	1.3	1.5	1.7	1.8	1.3	0.4	0.6	0.2
Average Number of vehicles	1.9	1.1	1.7	2.1	2.5	2.2	1.5	1.8	1.2
Percent distribution:									
Share of total consumer units	100.0%	7.5%	17.8%	22.5%	19.3%	12.6%	20.3%	10.7%	9.6%
Male	55	46	56	58	59	58	49	54	43
Female	45	54	44	42	41	42	51	46	57
Homeowner.	65	13	45	67	77	80	80	82	77
Renter	35	87	55	33	23	20	20	18	23
At least one vehicle owned or leased	87	70	87	91	92	90	82	87	76
Average annual expenditures	$36,995	$21,704	$36,158	$42,792	$46,511	$39,394	$26,521	$29,864	$22,884
Food	5,031	3,354	5,140	6,109	5,945	5,056	3,511	4,146	2,841
Alcoholic beverages.	318	369	365	384	320	330	172	219	122
Housing.	12,057	6,585	12,519	14,215	14,513	12,093	8,944	9,607	8,223
Apparel and services	1,743	1,192	2,047	2,053	2,048	1,722	1,070	1,235	901
Transportation	7,011	5,037	7,150	8,041	9,010	7,330	4,385	5,457	3,196
Vehicle purchases (net outlay).	3,305	2,859	3,500	3,807	4,117	3,406	1,911	2,422	1,344
Gasoline and motor oil.	1,055	708	1,066	1,259	1,349	1,093	644	807	463
Other vehicle expenses.	2,254	1,253	2,249	2,565	3,085	2,339	1,443	1,724	1,131
Vehicle finance charges	320	209	402	394	431	320	104	146	57
Maintenance and repairs	664	402	554	743	890	724	519	596	434
Vehicle insurance	756	408	705	806	1,052	803	566	638	485
Vehicle rental, leases, licenses, other	513	234	588	620	712	493	255	344	155
Public transportation	397	217	335	411	459	492	387	504	258
Health care.	1,959	551	1,170	1,631	2,183	2,450	3,019	2,991	3,052
Entertainment.	1,891	1,149	1,776	2,254	2,367	2,175	1,238	1,567	874
Personal care products and services.	408	254	381	471	475	449	333	370	295
Reading.	159	70	116	157	210	195	163	184	141
Education.	635	1,277	453	637	1,125	552	139	165	111
Tobacco products and smoking supplies.	300	220	295	370	395	329	148	204	86
Miscellaneous.	867	353	727	946	1,089	1,021	790	775	807
Cash contributions	1,181	182	585	1,067	1,415	1,750	1,627	1,663	1,588
Personal insurance and pensions.	3,436	1,110	3,433	4,455	5,415	3,941	980	1,280	647

Share of Budget	All consumer units	Under 25	25-34	35-44	45-54	55-64	65 and over	65-74	75 and over
Food	13.6%	15.5%	14.2%	14.3%	12.8%	12.8%	13.2%	13.9%	12.4%
Alcoholic beverages.	0.9%	1.7%	1.0%	0.9%	0.7%	0.8%	0.6%	0.7%	0.5%
Housing.	32.6%	30.3%	34.6%	33.2%	31.2%	30.7%	33.7%	32.2%	35.9%
Apparel and services	4.7%	5.5%	5.7%	4.8%	4.4%	4.4%	4.0%	4.1%	3.9%
Transportation	19.0%	23.2%	19.8%	18.8%	19.4%	18.6%	16.5%	18.3%	14.0%
Vehicle purchases (net outlay).	8.9%	13.2%	9.7%	8.9%	8.9%	8.6%	7.2%	8.1%	5.9%
Gasoline and motor oil.	2.9%	3.3%	2.9%	2.9%	2.9%	2.8%	2.4%	2.7%	2.0%
Other vehicle expenses.	6.1%	5.8%	6.2%	6.0%	6.6%	5.9%	5.4%	5.8%	4.9%
Vehicle finance charges	0.9%	1.0%	1.1%	0.9%	0.9%	0.8%	0.4%	0.5%	0.2%
Maintenance and repairs	1.8%	1.9%	1.5%	1.7%	1.9%	1.8%	2.0%	2.0%	1.9%
Vehicle insurance	2.0%	1.9%	1.9%	1.9%	2.3%	2.0%	2.1%	2.1%	2.1%
Vehicle rental, leases, licenses, other	1.4%	1.1%	1.6%	1.4%	1.5%	1.3%	1.0%	1.2%	0.7%
Public transportation	1.1%	1.0%	0.9%	1.0%	1.0%	1.2%	1.5%	1.7%	1.1%
Health care.	5.3%	2.5%	3.2%	3.8%	4.7%	6.2%	11.4%	10.0%	13.3%
Entertainment.	5.1%	5.3%	4.9%	5.3%	5.1%	5.5%	4.7%	5.2%	3.8%
Personal care products and services.	1.1%	1.2%	1.1%	1.1%	1.0%	1.1%	1.3%	1.2%	1.3%
Reading.	0.4%	0.3%	0.3%	0.4%	0.5%	0.5%	0.6%	0.6%	0.6%
Education.	1.7%	5.9%	1.3%	1.5%	2.4%	1.4%	0.5%	0.6%	0.5%
Tobacco products and smoking supplies.	0.8%	1.0%	0.8%	0.9%	0.8%	0.8%	0.6%	0.7%	0.4%
Miscellaneous.	2.3%	1.6%	2.0%	2.2%	2.3%	2.6%	3.0%	2.6%	3.5%
Cash contributions	3.2%	0.8%	1.6%	2.5%	3.0%	4.4%	6.1%	5.6%	6.9%
Personal insurance and pensions.	9.3%	5.1%	9.5%	10.4%	11.6%	10.0%	3.7%	4.3%	2.8%

Footnotes:

a/ Components of income and taxes are derived from "complete income reporters" only.

b/ No data reported.

Source: "Consumer Expenditure Survey, 1999," by Bureau of Labor Statistics, Department of Labor

BLS Internet download site: http://www.bls.gov/csxhome.htm?3

TABLE 6 Travel Characteristics of Various Age Cohorts

Age	Total Trips		Distance		Time		Time of Day Activity Distribution			
Cohort	Mean	Median	Mean	Median	Mean	Median	7am-10am	10am-3pm	3pm-7pm	7pm-7pm
16-64	4.2	4.0	33.4	22.0	64.8	53.0	26.9%	37.5%	27.8%	7.8%
55-64	3.7	4.0	27.6	18.0	59.0	47.0	27.6%	38.9%	26.5%	7.0%
65 and Older	3.1	3.0	19.1	9.0	46.7	34.0	22.8%	43.3%	27.4%	6.5%
65-74	3.5	3.0	22.3	12.0	53.0	40.0	23.8%	41.9%	27.6%	6.7%
75 and Older	2.4	2.0	13.6	4.0	36.3	22.0	20.3%	46.7%	27.0%	6.0%
Age	Non-Work Trips		Distance		Time		Time of Day Activity Distribution			
Cohort	Mean	Median	Mean	Median	Mean	Median	7am-10am	10am-3pm	3pm-7pm	7pm-7pm
16-64	2.9	2.0	20.8	8.0	41.4	23.0	18.9%	36.3%	33.8%	10.9%
55-64	2.9	2.0	20.0	8.0	43.3	27.0	22.1%	38.7%	30.6%	8.6%
65 and Older	2.8	2.0	17.5	7.2	43.0	30.0	21.0%	43.6%	28.5%	6.9%
65-74	3.2	3.0	20.2	10.0	48.1	34.0	21.6%	42.1%	29.0%	7.2%
75 and Older	2.3	2.0	12.8	4.0	34.5	20.0	19.7%	46.8%	27.4%	6.1%

Source: Processed from 1995 National Personal Travel Survey (NPTS) data.

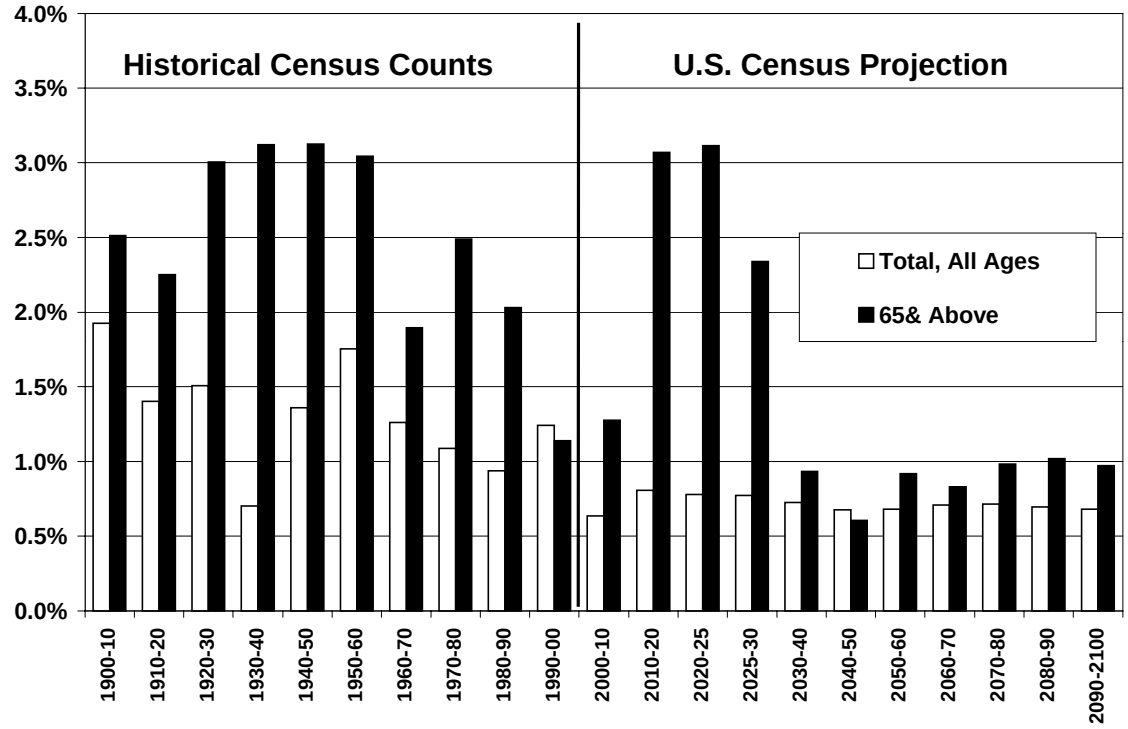

FIGURE 1 Average Annual Compound Growth Rate of Population (Ages 65 and Above Versus All Ages).

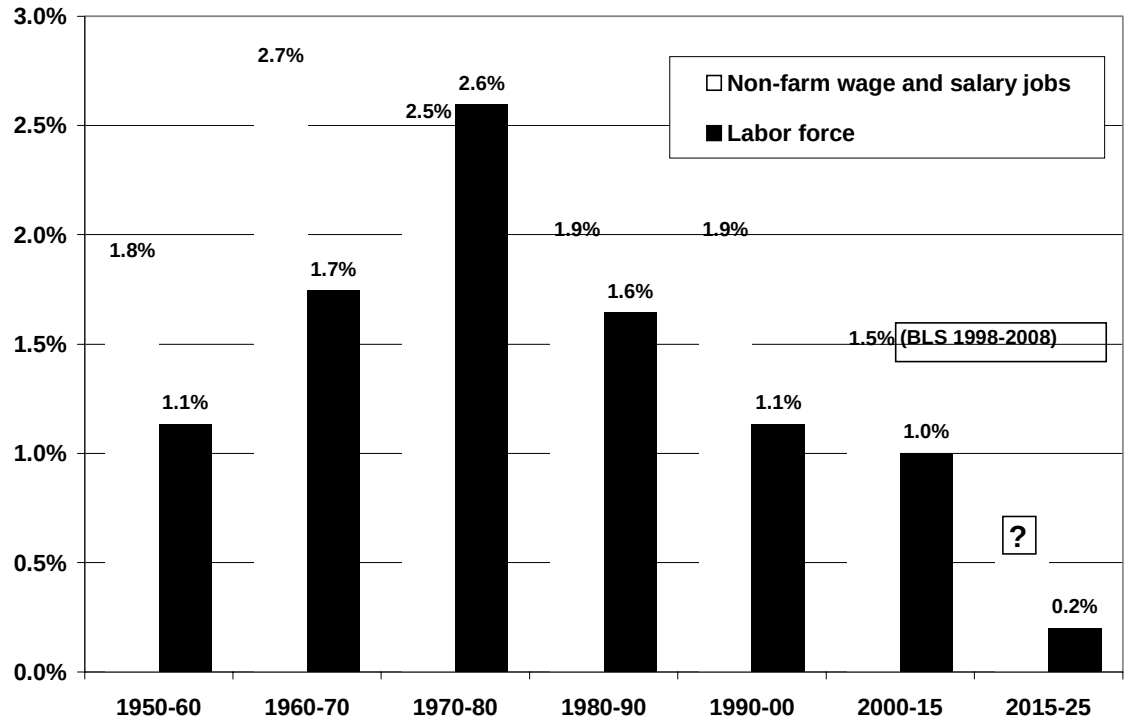

FIGURE 2 Annual Compound Growth Rates of Labor Force and Non-farm Wage and Salary Jobs.